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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Robin Torres
(Type or print name of person mailing paper)

Date: May 15, 1996

Robin Torres
(Signature of person mailing paper)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of	)	Group Art Unit: 1803
Chris Buhr et al	)	Docket No. 157
Serial No: 07/652,978	)	Examiner: G. Kunz
Filed: February 8, 1991	)	
Title: METHYLENE PHOSPHONATE OLIGONUCLEOTIDE ANALOGS AND NUCLEOSIDES	)	

DECLARATION

The Assistant Commissioner
for Patents
Washington, D.C. 20231

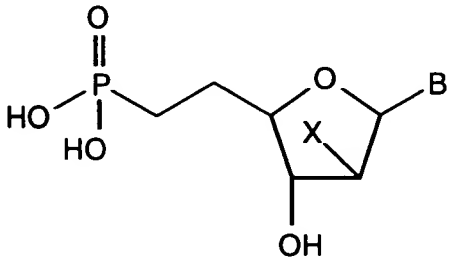
Dear Sir:

I, Norbert Bischofberger, declare as follows:

1. I have been engaged in the synthesis and chemistry of oligonucleotides, nucleotides and nucleosides for over ten years. A copy of my Curriculum Vitae is attached hereto.

2. I am a coinventor of the above-referenced application.

3. I submitted nucleotide analogs that are disclosed in the patent application for evaluation of their biological activity against a standard panel of herpesviruses - HSV-1, HSV-2, HCMV (human cytomegalovirus), VZV (varicella zooster virus) and EBV (Epstein-Barr virus). I obtained the information from the assays shown in Table 1. The compounds had the structures shown below.



compound
1 B = cytosine; X = hydrogen
2 B = adenine; X = fluorine
3 B = thymine; X = fluorine
4 B = uracil; X = fluorine
5 B = cytosine; X = fluorine

TABLE 1

compound	virus	EC_{50}*	IC_{50}**	SI***
1	HSV-1	> 100	> 100	1
	HSV-2	> 100	> 100	1
	HCMV	> 100	> 100	1
	VZV	-	-	-
	EBV	> 10.6	> 100	> 9.4
2	HSV-1	> 100	> 100	1
	HSV-2	> 100	> 100	1
	HCMV	> 100	> 100	1
	VZV	> 100	> 100	1
	EBV	> 0.23	> 100	> 434
3	HSV-1	> 100	> 100	1
	HSV-2	> 100	> 100	1
	HCMV	> 100	> 100	1
	VZV	> 100	> 100	1
	EBV	> 42.2	> 100	> 2.4
4	HSV-1	> 100	> 100	1
	HSV-2	> 100	> 100	1
	HCMV	> 100	> 100	1
	VZV	> 100	> 100	1
	EBV	> 100	> 100	1
5	HSV-1	> 100	> 100	1
	HSV-2	> 100	> 100	1
	HCMV	> 100	98.2	1
	VZV	> 100	> 100	1
	EBV	> 100	> 100	1

* - Effective concentration 50%. Concentration of compound in µg/mL needed to reduce viral replication by 50%; ** - Inhibitory concentration 50%. Concentration of compound in µg/mL needed to reduce uninfected cell replication by 50%; *** - Selectivity Index. Ratio of 50% inhibitory concentration to 50% effective concentration.

4. The results show that compounds **1-3** all had specific antiviral activity against EBV. This activity was not due only to inhibiting cell replication, because each compound had a selectivity index > 1.

5. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date 5-10-1996 Norbert Bischofberger

Gilead Sciences, Inc.
353 Lakeside Drive
Foster City, CA 94404

Norbert Bischofberger